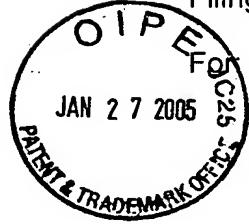501.43507X00

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: K. KAIYA, et al

Serial No.: 10/774,470

Filing Date: February 10, 2004

EXTERNAL STORAGE AND DATA RECOVERY METHOD FOR
EXTERNAL STORAGE AS WELL AS PROGRAM

PETITION TO MAKE SPECIAL
UNDER 37 CFR 1.102(d) and MPEP. §708.02, VIII

Commissioner for Patents   January 27, 2005
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

1. Petition

Applicants hereby petition to make this application **Special**, in accordance with

37 CFR §1.102(d) and MPEP 708.02, VIII. The present invention is a new application

filed in the United States Patent and Trademark Office on February 10, 2004 and as

such has not received any examination by the Examiner.

2. Claims

Applicants hereby represent that all the claims in the present application are

directed to a single invention. If upon examination it is determined that all the claims

presented are not directed to a single invention, Applicants will make an election without

traverse as a prerequisite to the granting of special status.

3. Search

Applicants hereby submit that a pre-examination search, a copy of which is attached, has been made by a professional searcher in the following classes and subclasses:

Class	Subclasses	Description
	161	...Archiving
	162	...Backup
714/		ERROR DETECTION/CORRECTION AND FAULT DETECTION/RECOVERY
	2	..Fault recovery
	13	...Prepared backup processor (e.g., initializing cold backup) or updating backup processor (e.g., by checkpoint message)
	15	...State recovery (i.e., process or data file)
	20	....Plural recovery data sets containing set interrelation data (e.g., time values or log record numbers)

The above subclasses represent areas deemed to contain subject matter of interest to one or more of the search features. Please note that relevant references may be classified outside of these areas. The integrity of the search is based on the records as presented to us by the United States Patent and Trademark Office (USPTO). No further integrity studies were performed. Also a key word search was performed on the USPTO full-text database including published U.S. patent applications.

4. Copy of References

A listing of all references found by the professional searcher is provided by a Form PTO-1449 and copies of the references and the Form PTO-1449 are submitted as part of an Information Disclosure Statement (IDS) filed on even date.

**5. Detailed Discussion of the References and
Distinctions Between the References and the Claims**

Below is a discussion of the references uncovered by the search and cited in the

IDS filed on even date that appear to be most closely related to the subject matter

encompassed by the claims of the present application, and which discussion particularly

points out how Applicants' claimed subject matter is distinguishable over those

references. All other references uncovered by the search and cited in the IDS filed on

even date are **not** treated in detail herein.

a.   Detailed Discussion of the References

Dunham (U.S. Patent 6,269,431 B1) provides for Virtual Storage and Blcok

Level Direct Access of Secondary Storage for Recovery of Backup Data. Disclosed

is a method where a host processor can transmit a request to a data storage

subsystem for assignment of a virtual storage address from which a specified

backup version in the secondary data storage can be accessed via storage access

requests that are transmitted from the host processor to the data storage subsystem.

The data storage subsystem may then assign a virtual storage address to specified

backup version from which host processor will then access the specified backup

version (see col. 2, lines 2-17 and col. 5, lines 57-65).

DeKoning (U.S. Patent 6,691,245 B1) provides for Data Storage with Host-

Initiated Synchronization and Fail-Over of Remote Mirror. Discussed is a "checkpoint",

otherwise known as the time at which data synchronization occurs. The remote storage

device may maintain a "snapshot" of the data to the latest checkpoint state. In the

event of a failure data can be restored using the data stored on the remote storage

device to the last common checkpoint state. As illustrated in Figs. 2 and 3 of Dekoning snapshots 148 and 150 may comprise a "rolling" repository of preexisting data maintained with "markers" set that may indicate each of the checkpoints. A marker is a label or demarcation in a log of snapshots 148 and 150 that may indicate where one checkpoint ends and another begins. In this manner, the remote storage device 110 may roll back to any marker, or checkpoint, depending on the point at which data is considered to be more "valid" (see Fig. 2, col. 2, lines 25-29 and 38-42; col. 7, lines 41-40).

Orsley (U.S. Patent Application No. 2004/0059869 A1) provides for an Accelerated RAID with Rewind Capability. Discussed is a mirror area, which may act as a temporary store for a log. If a baseline backup of an entire RAID subsystem stripe is created just before the log files are archived, each successive state of the RAID subsystem can be recreated by re-executing the write requests within the archived log files. This would allow any earlier state of the stripe of the RAID subsystem to be recreated (see paragraph 14).

Ofek et al (U.S. Patent No. 6,397,308) provides for an Apparatus and Method for Differential Backup and Restoration of Data in a Computer Storage System. Discussed is a method for sending a copy of data from a storage element of a computer system. Storage device may include means for identifying data blocks that have changed since an earlier point in time and means for transmitting a differential abstract block set from memory. A metadata segment may be stored on readable media to identify data blocks of the logical object in data segments. Metadata data may be provided to identify the order of data stored in the identified storage segments in the logical object (see col. 9, lines 26-27, 61-65; col. 10, lines 47-49; and col. 11, lines 58-60).

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Welsh et al (U.S. Patent Application Publication No. 2004/0117572 A1) provides for Persistent Snapshot Methods. Discussed is a snapshot that may be periodically "taken" so that a computer system can be restored in event of failure. A PSM module 220 in conjunction with operation system 210 may be able to display current and historical snapshot information by accessing both active user and system data 235 and snapshot caches 252, 254 and 256 (see Fig. 2 and paragraphs 51 and 53).

b.   Distinctions Between the References and the Claims

The present invention as recited in the claims is not taught or suggested by any of the above noted references whether taken individually or in combination with each other or in combination with any of the other references now of record.

The present invention as now recited, for example, in claim 1 is directed to an external storage 60 to be connected to a host computer 20 including storing means 30 which stores data to be used by the host computer, and control means 10 which controls the storing means 30. The control means 10 includes registering means which registers a recoverable point to be set by the host computer concerning data stored in the storing means, information for selection sending means which sends information for selection at the registered recoverable point to the host computer in response to a request from the host computer, and recovering means which recovers data designated by the host computer to a designated recoverable point based on the information for selection at the recoverable point.

The above described features of the present invention, particularly the provision of registering a recoverable point set by the host computer, sending information to the host computer which allows for the selection of a recoverable point

to be registered and recovering data based on the selected recoverable point as registered are not taught or suggested by any of the above described references whether taken individually or in combination with each other.

As noted above, Dunham provides that a host processor can transmit a request for assignment of a virtual storage address for which a specified backup version and the secondary data storage can be accessed. However, this teaching of Dunham is not intended to allow the host computer to selectively designate a recoverable point based upon selection information sent from the storage device, registering the designated recovery point and performing recovery data of data to the designated recoverable point as in the present invention as recited in the claims. These features of the present invention are also deficient in each of the other references identified above.

Therefore, the features of the present invention as recited in the claims are not taught or suggested by any of the references of record whether taken individually or in combination with each other.

6. Fee (37 C.F.R. 1.17(i))

The fee required by 37 C.F.R. § 1.17(i) is to be paid by:

[X]   the Credit Card Payment Form (attached) for $130.00.

[   ]   charging Account _____ the sum of $130.00.

A duplicate of this petition is attached.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, or credit any overpayment of fees, to the deposit account of MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C., Deposit Account No. 50-1417 (501.43507X00).

Respectfully submitted,

MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.

Carl I. Brundidge
Registration No. 29,621

CIB/jdc
Enclosures
703) 684-1120

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